# DATA SUMMARY REPORT ON TRACE ORGANIC CONTAMINANTS IN ATLANTIC REGION PRECIPITATION DURING 1984

# DATA SUMMARY REPORT ON TRACE ORGANIC CONTAMINANTS IN ATLANTIC REGION PRECIPITATION DURING 1984

IWD-AR-WQB-85-84

INLAND WATERS DIRECTORATE
ENVIRONMENT CANADA

Guy L. Brun

Water Quality Branch
Inland Waters Directorate
Moncton, N. B.

June 6, 1985

A copy in French will be made available upon request

TABLE OF CONTENTS


| | | PAGE |
|---|---|---|
| ABSTRACT | | i |
| SOMMAIRE | | i |
| INTRODUCTION | | 1 |
| SAMPLING PROCEDURE AND ANALYTICAL METHODS | | 2 |
| RESULTS AND DISCUSSION | | 2 |
| REFERENCES | | 5 |
| TABLE 1 | NAQUADAT Method Codes and Limits of Detection for OC's, PCB's, PAH's and CB's in Water | 6 |
| TABLE 2(a&b) | Trace Organic Contaminants in Wet Precipitation at Kejimkujik National Park, N.S., during 1984 | 7 |
| TABLE 3(a&b) | Trace Organic Contaminants in Wet Precipitation at Ellerslie, P.E.I., during 1984 | 9 |
| TABLE 4(a&b) | Trace Organic Contaminants in Wet Precipitation at Jackson, N.S., during 1984 | 11 |

## ABSTRACT

A total of twenty-eight wet precipitation samples were collected during 1984 from three locations in the Atlantic Region. They were analysed for organochlorine pesticides, polychlorinated biphenyls, chlorinated benzenes and polyaromatic hydrocarbons. The BHC isomers (alpha and gamma) were detected in the majority of samples at mean concentrations significantly lower than previous years. A marked increase in the ratio of alpha/gamma isomer was also observed, possibly indicating a developing trend. PCB levels at Kejimkujik National Park, N.S. and Ellerslie, P.E.I. decreased significantly, especially at the latter site where relatively high concentrations were previously reported. At the end of 1984, a new monitoring station situated in Jackson, Nova Scotia was installed to supplement the data base.



## SOMMAIRE

Vingt-huit échantillons de précipitations humides furent recueillis de trois localités dans la région de l'atlantique au cours de l'année 1984. Ces échantillons furent analysés pour identification quantitative des pesticides organochlorés, biphényles polychlorés (BPC), benzenes polychlorés et hydrocarbures polyaromatiques. Les isomères du BHC (alpha et gamma) furent détectés dans la majorité des échantillons à des teneurs moyennes nettement inférieures à celles des anneés précédentes. De plus, un accroissement significatif dans le rapport des isomères alpha/gamma fut observé, ce qui pourrait signaler le début d'une nouvelle tendance. Les teneurs moyennes en BPC au parc national de Kejimkujik (N.-É.) et à Ellerslie (Î.P.-É.) ont toutefois diminué de façon appréciable, spécialement en ce dernier lieu ou des teneurs relativement élevées ont déjà été rapportées. Vers la fin de 1984 un nouveau site de surveillance fut établi à Jackson, N.-E., afin d'accroître la banque de données.

## INTRODUCTION

The presence of organic contaminants in the atmosphere is fairly well documented. It was approximately twenty years ago that organochlorine pesticides were detected in rainwater from specific locations in England (1,2). These authors presumed that, in view of significant world-wide use of this particular group of insecticides, there existed a strong possibility for global atmospheric contamination. Studies carried out in other countries such as Canada and the United States (3,4) have since proven this assumption to be correct. A number of other environmental contaminants have also been reported present in rain water. Polychlorinated benzenes (3,4), chlorinated benzenes, polyaromatic hydrocarbons and phthalate esters (5), polychlorinated terphenyls (6) and a number of other organic compounds (7) including aliphatic and aromatic hydrocarbons, benzaldehydes, phenols, aliphatic and aromatic ketones, mono- and dicarboxylic acids, amines and azaarenes have been identified.

In light of the above and the fact that many of these contaminants are ubiquitous in the environment, it was felt that there was a need to monitor wet precipitation for select groups of contaminants in the Atlantic Region. Water Quality Branch has been involved since 1980 with this study. Two sites in the Atlantic Region, namely: Kejimkujik National Park in Nova Scotia and the Ellerslie Fisheries Station in Prince Edward Island continue to be used as sampling stations. A third site was recently selected to expand the network and data base. The Cobequid Federal Fisheries Hatchery in Jackson, N.S. was chosen and a modified Sangamo Type A collector was installed. Precipitation composite samples collected on a monthly basis were analysed for chlorinated hydrocarbon insecticides (OC's), polychlorinated biphenyls (PCB's), chlorinated benzenes (CB's) and polyaromatic hydrocarbons (PAH's). Results obtained for previous years' collection have been reported in data summary reports (8,9,10).

This report summarizes data obtained on twenty-eight wet precipitation samples collected during 1984 from three locations in the Atlantic Region. The present data base precludes the confirmation of long term or seasonal trends but we plan a comprehensive report when

sufficient amounts of data have been gathered.

SAMPLING PROCEDURE AND ANALYTICAL METHODS

The sampling devices, sample handling and extraction procedures, analytical instrument specifications and conditions are as described in previous reports (9,10).

RESULTS AND DISCUSSION

Table 1 gives the specific list of parameters which were determined in the precipitation samples. Limits of detection reported in this table are based on a sample volume of one litre. It should be noted that actual limits of detection will vary somewhat for each sample depending on its volume and the final extract volume. The NAQUADAT No. is related to the method used for specific compound data which are stored in the National Water Quality Data Bank.

Data obtained in monthly composite samples from Kejimkujik, Ellerslie and Jackson are presented in Tables 2, 3 and 4 respectively. The average monthly sample volumes during the year were 4515 mL and 3794 mL at Kejimkujik National Park and Ellerslie, respectively. However, two months of sampling at Jackson did not provide sufficient data to calculate meaningful statistics. The average monthly catch is typical for those two sites, where Kejimkujik National Park receives substantially more precipitation than Ellerslie, P.E.I.

The mean concentration of $\alpha$-BHC and $\gamma$-BHC (Lindane) were only slightly different between the two sites. However, the levels represent a significant decrease when compared to concentrations reported between 1980 and 1984 (8,9,10). Additional data through continued monitoring should help delineate whether or not there is a decreasing trend. It is interesting to note that the ratios of $\alpha$-BHC to $\gamma$-BHC annual mean concentrations (8-Keji; 6-Ellerslie) have increased compared to 1983 figures, and are similar to those ratios observed for 1982. The 1983 isomer ratios were in turn comparable to the respective 1981 ratios. This occurrence is very peculiar, indicating significant changes in relative amounts of the two isomers during the course of the year at

both sites. This is probably strongly influenced by seasonal changes and most likely explained by air-water mass transfer theory and Henry's Law. This is beyond the scope of this report at this time and will be addressed in a future interpretive report.

Endosulfan isomers were detected at trace level concentrations at both sites during August, and γ-Chlordane at 0.005 ug/L was observed just once in June at Kejimkujik. None of the other OC pesticides were detected.

During 1984 traces of total PCB's were reported in only four instances in Kejimkujik precipitation whereas only three samples had a measurable average concentration of 0.036 ug/L and two had trace levels at Ellerslie. These levels have significantly decreased, especially in Ellerslie where local contamination was suspected of contributing to relatively high concentrations in past years (10).

Two dichlorobenzene isomers and one trichlorobenzene isomer were detected in the samples. The observations from one site coincided with the other site by sampling period. These CB's were found also in samples of previous years on a sporadic basis. Although extreme care was exercised in the laboratory, the 1,4-DCB data may be suspect due to possible contamination emanating from the building itself. Results were reported only for those samples where method and reagent blanks showed no significant contamination.

All six PAH's were detected in at least one sample. The most prominent compound within the group was fluoranthene which was observed in the majority of samples. A mean annual concentration of 0.0075 ug/L was measured at Kejimkujik which is identical to the 1983 mean. The mean of 0.010 ug/L at Ellerslie is somewhat lower than 1983 (0.014 ug/L) but otherwise almost identical to the 1981-1982 annual means. The mean concentrations for benzo(b) fluoranthene, benzo(k) fluoranthene and benzo(a) pyrene remain somewhat similar to levels of previous years for each respective site.

In conclusion two interesting observations can be drawn from the 1984 wet precipitation data. The PCB levels at both sites decreased

significantly, especially at the Ellerslie, P.E.I. location where previous monitoring had shown relatively high concentrations. The BHC-isomer concentrations have significantly decreased while the alpha/gamma annual concentration ratios have again increased to comparable figures observed in 1982. With additional data it may be possible to detect a developing trend on how some of these contaminants disperse and persist in what must be atmospheric transport. It would be desirable to expand the list of parameters to include other groups of chemicals having similar physical and chemical properties, but this will depend on the limited amounts of resources available.

REFERENCES

(1) Wheatley, G.A. and J.A. Hardman; Nature 207, 486-487 (1965).

(2) Abbott, D.C., R.B. Harrison, J.O.G. Tatton and J. Thompson; Nature 208, 1317-1318 (1965).

(3) Swain, W.R.; J. Great Lakes Res. 4 (3-4), 398-407 (1978).

(4) Strachan, W.M.J. and H. Huneault; J. Great Lakes Res. 5(1), 61-68 (1979).

(5) Eisenrich, S.J., B.B. Looney and J.D. Thornton; J. Environ. Sci. Technol. 15(1), 30-18 (1981).

(6) Wingender, R.J. and R.M. Williams; J. Environ. Sci. Technol. 18(8), 625-628 (1984).

(7) Kawamura, K. and I.R. Kaplan; J. Environ. Sci. Technol. 17(8), 497-501 (1983).

(8) Brun, G.L.; Internal Report, "Data Summary Report for Trace Organics in Precipitation for 1980-1981; Kejimkujik Park, N.S. and Ellerslie, P.E.I.", Inland Waters Directorate (1982).

(9) Brun, G.L.; Inland Waters Directorate Report, IWD-AR-WQB-83-44 (1983).

(10) Brun, G.L.; Inland Waters Directorate Report, IWD-AR-WQB-84-63 (1984).

TABLE 1

NAQUADAT METHOD CODES AND LIMITS OF DETECTION[1]
FOR ORGANOCHLORINE PESTICIDES, PCB'S, POLYAROMATIC
HYDROCARBONS AND CHLORINATED BENZENES IN WATER

| Name of Compound | NAQUADAT No. | Limit of Detection (ug/L) |
|---|---|---|
| α-BHC | 18075 | 0.001 |
| Lindane | 18070 | 0.001 |
| Heptachlor | 18040 | 0.001 |
| Aldrin | 18130 | 0.001 |
| Heptachlor Epoxide | 18045 | 0.001 |
| γ-Chlordane | 18065 | 0.005 |
| α-Chlordane | 18060 | 0.005 |
| α-Endosulfan | 18050 | 0.01 |
| p,p'-DDE | 18020 | 0.001 |
| Dieldrin | 18150 | 0.001 |
| Endrin | 18140 | 0.01 |
| o,p'-DDT | 18005 | 0.001 |
| p,p'-DDD | 18010 | 0.001 |
| β-Endosulfan | 18055 | 0.01 |
| p,p'-DDT | 18000 | 0.001 |
| Mirex | 18125 | 0.001 |
| Arochlors-Total | 18164 | 0.005 |
| | | |
| 1,3-DCB | 17820 | 0.02 |
| 1,4-DCB | 17821 | 0.02 |
| 1,2-DCB | 17822 | 0.02 |
| 1,3,5-TCB | 17830 | 0.004 |
| 1,2,4-TCB | 17831 | 0.004 |
| 1,2,3-TCB | 17832 | 0.004 |
| 1,2,3,5-TeCB | 17840 | 0.002 |
| 1,2,4,5-TeCB | 17841 | 0.002 |
| 1,2,3,4-TeCB | 17842 | 0.002 |
| PeCB | 17850 | 0.002 |
| HCB | 17812 | 0.002 |
| | | |
| Fluoranthene | 18904 | 0.005 |
| Benzo(b) Fluoranthene | 18901 | 0.003 |
| Benzo(k) Fluoranthene | 18903 | 0.002 |
| Benzo(a) Pyrene | 18900 | 0.003 |
| Benzo(g,h,i) Perylene | 18902 | 0.006 |
| Indeno(1,2,3,cd) Pyrene | 18905 | 0.005 |

(1) The limits of detection are based on a sample volume of 1.0 L; because the volume of precipitation varies constantly the limits of detection will also vary accordingly.

TABLE 2(a)

TRACE ORGANIC CONTAMINANTS IN WET PRECIPITATION AT KEJIMKUJIK NATIONAL PARK, N.S. [1] DURING 1984

| Lab Sample No. | Period of Collection (month) | Composite Volume (mL) | α-BHC | γ-BHC (Lindane) | Heptachlor | Aldrin | Heptachlor epox. | γ-Chlordane | α-Chlordane | α-Endosulfan | p,p'-DDE | Dieldrin | Endrin | o,p'-DDT | p,p'-DDD | β-Endosulfan | p,p'-DDT | Mirex | Aroclor Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 303819 | Jan. | 4700 | 0.006 | 0.001 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | TR |
| 304152 | Feb. | 7565 | 0.007 | 0.001 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | TR |
| 400002 | Mar. | 5740 | 0.007 | IN | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 400201 | Apr. | 6540 | 0.004 | IN | - | - | - | - | - | - | - | - | - | - | - | - | - | - | TR |
| 400645 | May | 4790 | 0.011 | 0.001 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | TR |
| 401248 | Jun. | 4690 | 0.008 | 0.001 | - | - | - | 0.005 | - | - | - | - | - | - | - | - | - | - | - |
| 401606 | Jul. | 3900 | 0.003 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 402035 | Aug. | 4350 | 0.006 | TR | - | - | - | - | - | TR | - | - | - | - | - | - | - | - | - |
| 402461 | Sep. | 3250 | 0.012 | - | - | - | - | - | - | - | - | - | - | - | - | TR | - | - | - |
| 402987 | Oct. | 1770 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 403266 | Nov. | 1100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 403576 | Dec. | 5780 | 0.008 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Mean | | 4515 | 0.0072 | 0.0010 | | | | | | | | | | | | | | | |

(1) NAQUADAT Station No. 3INS01ED0004: Concentration in ug/L
**C**: Contamination; **TR**: Trace; **IN**: Interference;
**NA**: Not analyzed

TABLE 2(b)

TRACE ORGANIC CONTAMINANTS IN WET PRECIPITATION AT KEJIMKUJIK NATIONAL PARK, N.S.[1] DURING 1984

| Lab Sample No. | Period of Collection (month) | Composite Volume (mL) | 1,3-DCB | 1,4-DCB | 1,2-DCB | 1,3,5-TCB | 1,2,4-TCB | 1,2,3-TCB | 1,2,3,5-TeCB | 1,2,4,5-TeCB | 1,2,3,4-TeCB | PeCB | HCB | F1 | B(b) F1 | B(k) F1 | B(a) P | B(g,h,i) Py | I(1,2,3,cd) P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 303819 | Jan. | 4700 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.012 | 0.004 | 0.001 | 0.001 | 0.005 | 0.005 |
| 304152 | Feb. | 7565 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.005 | 0.002 | 0.001 | - | - | 0.002 |
| 400002 | Mar. | 5740 | - | CO | - | - | - | - | - | - | - | - | - | 0.010 | 0.003 | 0.001 | 0.002 | - | - |
| 400201 | Apr. | 6540 | - | CO | - | - | - | - | - | - | - | - | - | 0.002 | - | - | - | - | - |
| 400645 | May | 4740 | - | CO | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 401248 | Jun. | 4690 | - | 0.89 | - | 0.011 | - | - | - | - | - | - | - | 0.006 | - | - | - | - | - |
| 401606 | Jul. | 3900 | - | 1.6 | - | 0.024 | - | - | - | - | - | - | - | 0.019 | - | - | - | - | - |
| 402035 | Aug. | 4350 | - | 0.035 | - | - | - | - | - | - | - | - | - | 0.003 | - | - | - | - | - |
| 402461 | Sep. | 3250 | - | - | 0.032 | .020 | - | - | - | - | - | - | - | 0.003 | - | - | - | - | - |
| 402987 | Oct. | 1770 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 403266 | Nov. | 1100 | - | CO | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 403576 | Dec. | 5780 | - | CO | - | - | - | - | - | - | - | - | - | - | 0.001 | 0.001 | 0.001 | - | - |
| Mean | | 4515 | | 0.84 | | 0.018 | | | | | | | | 0.0075 | 0.0025 | 0.0010 | 0.0013 | | 0.0035 |

(1) NAQUADAT Station No. 31NS01FD0004: Concentration in ug/L
**CO**: Contamination; **TR**: Trace; **IN**: Interference;
**NA**: Not analysed

TABLE 3(a)

TRACE ORGANIC CONTAMINANTS IN WET PRECIPITATION AT ELLERSLIE, P.E.I. [1], DURING 1984

| Lab Sample No. | Period of Collection (month) | Composite Volume (mL) | α-BHC | γ-BHC (Lindane) | Heptachlor | Aldrin | Heptachlor epox. | γ-Chlordane | α-Chlordane | α-Endosulfan | p,p'-DDE | Dieldrin | Endrin | o,p'-DDT | p,p'-DDD | β'-Endosulfan | p,p'-DDT | Mirex | Aroclor Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 303820 | Jan. | 2040 | 0.004 | 0.001 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | TR |
| 304153 | Feb. | 7600 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | TR |
| 400003 | Mar. | 5180 | 0.008 | IN | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.058 |
| 400202 | Apr. | 3800 | 0.008 | IN | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.035 |
| 400772 | May | 5900 | 0.013 | 0.001 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.016 |
| 401175 | Jun. | 3830 | 0.010 | 0.002 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 401607 | Jul. | 3400 | 0.006 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 402046 | Aug. | 4420 | 0.006 | - | - | - | - | - | - | TR | - | - | - | - | - | - | - | - | - |
| 402460 | Sep. | 3480 | 0.015 | - | - | - | - | - | - | - | - | - | - | - | - | TR | - | - | - |
| 402988 | Oct. | 1500 | 0.009 | 0.002 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 403268 | Nov. | 2280 | 0.006 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 403552 | Dec. | 2100 | 0.006 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Mean | | 3794 | 0.0082 | 0.0015 | | | | | | | | | | | | | | | 0.036 |

(1) NAQUADAT Station No. 33PE01CA0001: Concentration in ug/L
**CO**: Contamination; **TR**: Trace; **IN**: Interference;
**NA**: Not analysed

TABLE 3(b)

TRACE ORGANIC CONTAMINANTS IN WET PRECIPITATION AT ELLERSLIE, P.E.I.[1], DURING 1984

| Lab Sample No. | Period of Collection (month) | Composite Volume (mL) | 1,3-DCB | 1,4-DCB | 1,2-DCB | 1,3,5-TCB | 1,2,4-TCB | 1,2,3-TCB | 1,2,3,5-TeCB | 1,2,4,5-TeCB | 1,2,3,4-TeCB | PeCB | HCB | Fl | B(b) Fl | B(k) Fl | B(a) P | B(g,h,i) Py | I(1,2,3,cd) P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 303820 | Jan. | 2040 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.015 | 0.002 | 0.001 | - | - | - |
| 304153 | Feb. | 7600 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.008 | 0.002 | 0.001 | - | - | - |
| 400003 | Mar. | 5180 | - | 8 | - | - | - | - | - | - | - | - | - | 0.019 | 0.003 | 0.002 | 0.005 | - | - |
| 400202 | Apr. | 3800 | - | 8 | - | - | - | - | - | - | - | - | - | 0.004 | - | - | - | - | - |
| 400772 | May | 5900 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 401175 | Jun. | 3830 | - | 2.2 | - | 0.013 | - | - | - | - | - | - | - | 0.006 | - | - | - | - | - |
| 401607 | Jul. | 3400 | - | 1.2 | - | 0.042 | - | - | - | - | - | - | - | 0.005 | - | - | - | - | - |
| 402046 | Aug. | 4420 | - | 0.6 | - | - | - | - | - | - | - | - | - | 0.004 | - | - | - | - | - |
| 402460 | Sep. | 3480 | - | - | 0.061 | 0.012 | - | - | - | - | - | - | - | 0.003 | 0.001 | - | 0.001 | - | - |
| 402988 | Oct. | 1500 | - | - | - | - | - | - | - | - | - | - | - | 0.006 | - | - | - | - | - |
| 403268 | Nov. | 2280 | - | 8 | - | - | - | - | - | - | - | - | - | 0.021 | 0.002 | 0.001 | 0.002 | - | - |
| 403552 | Dec. | 2100 | - | 8 | - | - | - | - | - | - | - | - | - | 0.024 | 0.008 | 0.004 | 0.007 | - | - |
| Mean | | 3794 | - | 2.0 | | 0.022 | | | | | | | | 0.010 | 0.0030 | 0.0018 | 0.0037 | | |

(1) NAQUADAT Station No. 13PE01CA0001; Concentration in ug/L
**Type**: Contamination; **TR**: Trace; **IN**: Interference;
**NA**: Not analysed

TABLE 4(a)

TRACE ORGANIC CONTAMINANTS IN WET PRECIPITATION AT JACKSON, N.S.[1], DURING 1984

| Lab. Sample No. | Period of Collection (month) | Composite Volume (mL) | α-BHC | γ-BHC (Lindane) | Heptachlor | Aldrin | Heptachlor epox. | β-Chlordane | α-Chlordane | α-Endosulfan | p,p'-DDE | Dieldrin | Endrin | o,p'-TDE | p,p'-TDD | β-Endosulfan | p,p'-DDT | Mirex | Aroclor Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 403267 | Nov. | 1610 | 0.0050 | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " |
| 403553 | Dec. | 3700 | 0.0040 | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " |

(1) NAQUADAT Station No. 1BN601DN0001: Concentration in ug/L
"CO": Contamination

TABLE 4(b)

TRACE ORGANIC CONTAMINANTS IN WET PRECIPITATION AT JACKSON, N.S.[1], DURING 1984

| Lab Sample No. | Period of Collection (month) | Composite Volume (mL) | 1,3-DCB | 1,4-DCB | 1,2-DCB | 1,3,5-TCB | 1,2,4-TCB | 1,2,3-TCB | 1,2,3,5-TeCB | 1,2,4,5-TeCB | 1,2,3,4-TeCB | PeCB | HCB | F1 | B(b) F1 | B(k) F1 | B(e) P | B(g,h,i) Py | I(1,2,3,cd) P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 403267 | Nov. | 1610 | " | 88 | " | " | " | " | " | " | " | " | " | 0.0150 | " | " | " | " | " |
| 403553 | Dec. | 3700 | " | " | " | " | " | " | " | " | " | " | " | 0.0140 | 0.001 | 0.001 | 0.001 | " | " |

(1) NAQUADAT Station No. 33NS01DN0001: Concentration in ug/L
"U": Contamination